

Maryland Historical Trust

Maryland Inventory of Historic Properties number:

W:22-40

Name:

MD 115 (Munaster Mill Rd) over North Fork of
Rock Creek

The bridge referenced herein was inventoried by the Maryland State Highway Administration as part of the Historic Bridge Inventory, and SHA provided the Trust with eligibility determinations in February 2001. The Trust accepted the Historic Bridge Inventory on April 3, 2001. The bridge received the following determination of eligibility.

MARYLAND HISTORICAL TRUST

Eligibility Recommended _____

Eligibility Not Recommended X

Criteria: A B C D Considerations: A B C D E F G None

Comments: _____

Reviewer, OPS: Anne E. Bruder

Date: 3 April 2001

Reviewer, NR Program: Peter E. Kurtze

Date: 3 April 2001

MARYLAND INVENTORY OF HISTORIC BRIDGES
HISTORIC BRIDGE INVENTORY
MARYLAND STATE HIGHWAY ADMINISTRATION/
MARYLAND HISTORICAL TRUST

MHT No. M: 22-40

SHA Bridge No. 15016 Bridge name MD 115 (Muncaster Mill Road) over North Branch
of Rock Creek

LOCATION:

Street/Road name and number [facility carried] MD 115 (Muncaster Mill Road)

City/town Rockville Vicinity X

County Montgomery County

This bridge projects over: Road Railway Water X Land

Ownership: State X County Municipal Other

HISTORIC STATUS:

Is the bridge located within a designated historic district? Yes No

National Register-listed district National Register-determined-eligible district

Locally-designated district Other

Name of district

BRIDGE TYPE:

Timber Bridge :

Beam Bridge Truss -Covered Trestle Timber-And-Concrete

Stone Arch Bridge

Metal Truss Bridge

Movable Bridge :

Swing Bascule Single Leaf Bascule Multiple Leaf

Vertical Lift Retractable Pontoon

Metal Girder :

Rolled Girder Rolled Girder Concrete Encased

Plate Girder Plate Girder Concrete Encased

Metal Suspension

Metal Arch

Metal Cantilever

Concrete X:

Concrete Arch X Concrete Slab Concrete Beam Rigid Frame

Other Type Name

56 527

DESCRIPTION:Setting: Urban X Small town Rural **Describe Setting:**

Bridge 15016 carries MD 115 over the North Branch of Rock Creek in Montgomery County. MD 115 runs east-west and the North Branch of Rock Creek flows south. The bridge is located in the vicinity of Rockville, in North Branch Stream Valley Park, and is surrounded by a wooded area.

Describe Superstructure and Substructure:

Bridge 15016 is a 1-span, 2-lane, concrete arch bridge. The bridge was originally built in 1917, and the bridge was widened in 1970 with steel beams, a concrete deck, and aluminum railings. The structure is 10.4 meters (34 feet) long and has a clear roadway width of 13.4 meters (44 feet); there are no sidewalks. The out-to-out width is 14.3 meters (47 feet). The superstructure consists of 1 arch which supports a cast-in-place concrete deck and concrete parapets with aluminum rails. The arch spans 9.1 meters (30 feet) and is a filled spandrel concrete arch. The concrete deck has a bituminous wearing surface. The structure has concrete parapets with aluminum rail and the roadway approaches have metal guardrails. The substructure consists of 2 concrete abutments. There are 4 flared concrete wingwalls. The bridge is not posted, and has a sufficiency rating of 80.9.

According to the 1996 inspection report, this structure was in fair to good condition with some cracking and spalling. The asphalt wearing surface has spalling, cracking, and rutting. The arch and spandrel walls have fine cracks and erosion. The abutments have heavy to severe erosion. The wingwalls are settled and have areas of heavy to severe erosion. The steel girders have peeling paint and light rusting. Also, the concrete parapet is good condition.

Discuss Major Alterations:

The bridge was widened in 1970 with steel beams. New parapets with metal railings were added at that time.

HISTORY:WHEN was the bridge built: 1917, 1970This date is: Actual X Estimated Source of date: Plaque Design plans County bridge files/inspection form Other (specify): State Highway Administration Inspection Report/Bridge File**WHY was the bridge built?**

The bridge was constructed in response to the need for more efficient transportation network and increased load capacity.

WHO was the designer?

Unknown

WHO was the builder?

Unknown

WHY was the bridge altered?

To widen the bridge and make it safer.

Was this bridge built as part of an organized bridge-building campaign?

Unknown

SURVEYOR/HISTORIAN ANALYSIS:

This bridge may have National Register significance for its association with:

A - Events _____ **B- Person** _____
C- Engineering/architectural character _____

The bridge does not have National Register significance because it was widened with a metal beam section.

Was the bridge constructed in response to significant events in Maryland or local history?

The advent of modern concrete technology fostered a renaissance of arch bridge construction in the United States. Reinforced concrete allowed the arch bridge to be constructed with much more ease than ever before and maintained the load-bearing capabilities of the form. As the structural advantages of reinforced concrete became apparent, the heavy, filled barrel of the arch was lightened into ribs. Spandrel walls were opened, to give a lighter appearance and to decrease dead load. This enabled the concrete arch to become flatter and multi-centered, with longer spans possible. Designers were no longer limited to the semicircular or segmental arch form of the stone arch bridge. The versatility of reinforced concrete permitted development of a variety of economical bridges for use on roads crossing small streams and rivers.

Maryland's roads and bridge improvement programs mirrored economic cycles. The first road improvement of the State Roads Commission was a 7 year program, starting with the Commission's establishment in 1908 and ending in 1915. Due to World War I, the period from 1916-1920 was one of relative inactivity; only roads of first priority were built. Truck traffic resulting from war related factories and military installations generated new, heavy traffic unanticipated by the builders of the early road system. From 1920-1929, numerous highway improvements occurred in response to the increase in Maryland motor vehicles from 103,000 in 1920 to 320,000 in 1929, with emphasis on the secondary system of feeder roads which moved traffic from the primary roads built before World War I. After World War I, Maryland's bridge system also was appraised as too narrow and structurally inadequate for the increasing traffic, with plans for an expanded bridge program to be handled by the Bridge Division, set up in 1920. In 1920 under Chapter 508 of the Acts of 1920 the State issued a bond of \$3,000,000.00 for road construction; the primary purpose of these monies was to meet the state obligations involving the construction of rural post roads. The secondary purpose of these monies was to fund (with an equal sum from the counties) the building of lateral roads. The number of hard surfaced roads on the state system grew from 2000 in 1920 to 3200 in 1930. By 1930, Maryland's primary system had been inadequate to the huge freight trucks and volume of passenger cars in use, with major improvements occurring in the late 1930's.

As the nation's automotive traffic increased in the early twentieth century, local road networks were consolidated, and state highway departments were formed to supervise the construction and improvement of state roads. With a diverse topographical domain encompassing numerous small and large crossings, Maryland engineers quickly recognized the need for expedient design and construction through the standardization of bridge designs.

The concept and practice of standardization was one of the most important developments in engineering of the twentieth century. In Maryland, as in the rest of the nation, the standardized concrete types became the predominant bridge types built. In the period 1911 to 1920 (the decade in which standardized plans were introduced), beams and slabs constituted 65 percent and arches 35 percent of the extant 29 bridges built in Maryland during this period. In the following decade, 1921-1930, the beam (now the T-beam) and slab increased to 73 percent and the arch had declined to 27 percent of the 129 extant bridges; in the next decade (1931-1940), the beam and slab achieved 82 percent and arches had further declined, constituting only 18 percent of the total of extant bridges built on state-owned roads between 1931 and 1946.

Although beam and slab bridges became the utilitarian choice, it appears that the arch was selected when aesthetic as well as other site conditions were considered. The architectural treatment of extant arch bridges supports this assessment. Many of these bridges were multiple span structures with open spandrels or masonry facing. Another decorative feature of the concrete arch bridge was an open, balustrade-style parapet. Despite the popularity of ornamental arches and the increase in use of beam and slab bridges, examples of simpler, single and multiple span closed concrete arch bridges with solid parapets continued to be constructed throughout the early twentieth century.

When the bridge was built and/or given a major alteration, did it have a significant impact on the growth and development of the area?

There is no evidence that the construction of this bridge had a significant impact on the growth and development of this area.

Is the bridge located in an area which may be eligible for historic designation and would the bridge add to or detract from the historic/visual character of the potential district?

Unknown

Is the bridge a significant example of its type?

A significant example of a concrete arch bridge should possess character-defining elements of its type, and be readily recognizable as an historic structure from the perspective of the traveler. The integrity of distinctive features visible from the roadway approach, including parapet walls or railings, is important in structures which are common examples of their type. In addition, the structure must be in excellent condition. This bridge, which has been altered with a metal beam section, is an undistinguished example of a concrete arch bridge.

Does the bridge retain integrity of important elements described in Context Addendum?

This bridge was widened in 1970, resulting the loss of such character-defining elements as the parapets and the arch section.

Is the bridge a significant example of the work of a manufacturer, designer, and/or engineer?

This bridge is not a significant example of the work of a manufacturer, designer, and/or engineer.

Should the bridge be given further study before an evaluation of its significance is made?

No further study of this bridge is required to evaluate its significance.

BIBLIOGRAPHY:

County inspection/bridge files _____ SHA inspection/bridge files X
Other (list): _____

Johnson, Arthur Newhall

1899 The Present Condition of Maryland Highways. In *Report on the Highways of Maryland*. Maryland Geological Survey, The Johns Hopkins University Press, Baltimore.

P.A.C. Spero & Company and Louis Berger & Associates

1995 Historic Highway Bridges in Maryland: 1631-1960: Historic Context Report. Maryland State Highway Administration, Maryland State Department of Transportation, Baltimore, Maryland.

Tyrrell, H. Grattan

1909 *Concrete Bridges and Culverts for Both Railroads and Highways*. The Myron C. Clark Publishing Company, Chicago and New York.

SURVEYOR:

Date bridge recorded December 1997
Name of surveyor Wallace, Montgomery & Associates / P.A.C. Spero & Company
Organization/Address P.A.C. Spero & Co., 40 W. Chesapeake Avenue, Baltimore, MD 21204
Phone number (410) 296-1635 FAX number (410) 296-1670

Maryland Historic Highway Bridges

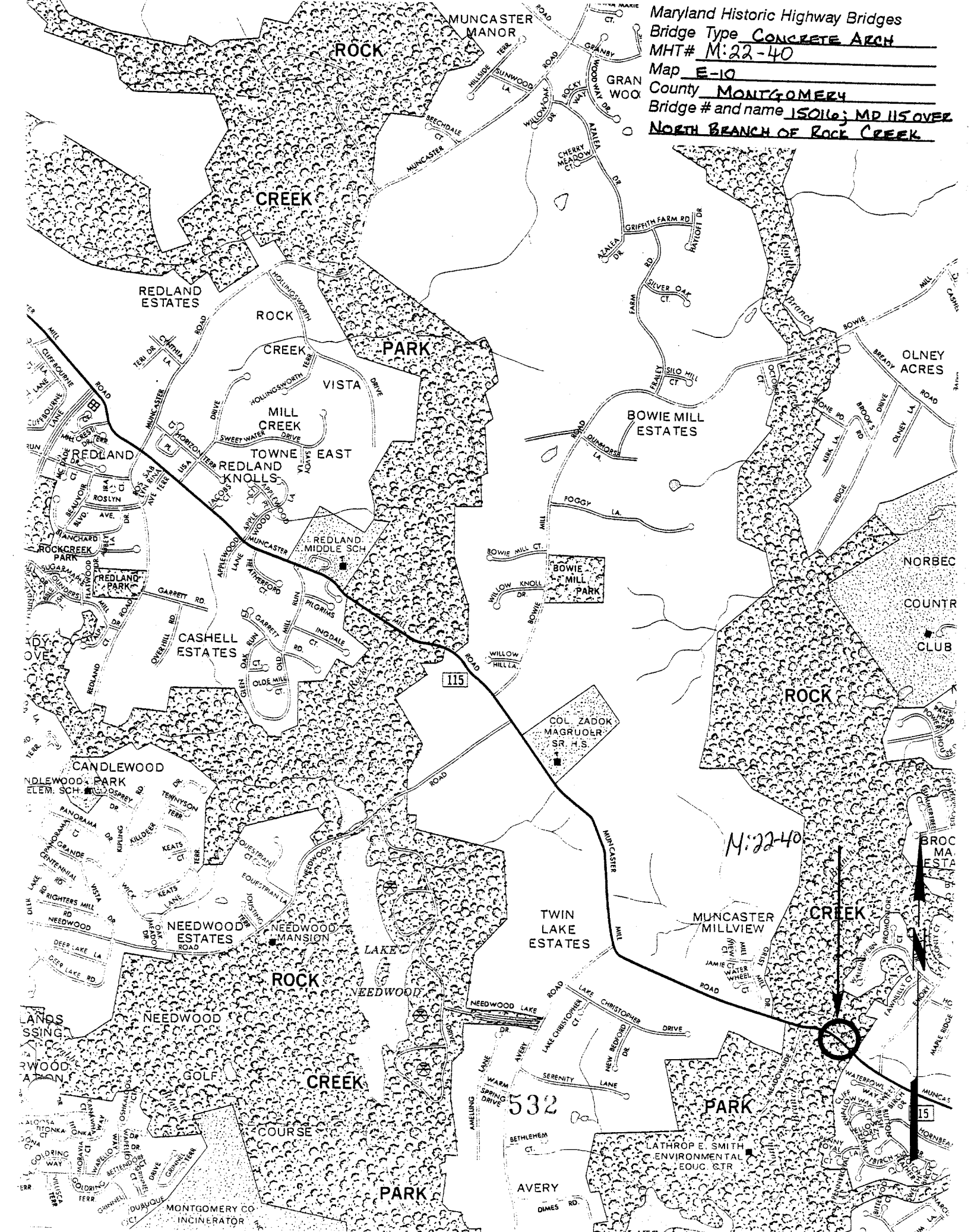
Bridge Type CONCRETE ARCH

MHT# M:22-40

Map E-10

County MONTGOMERY

Bridge # and name 15016; MD 115 OVER
NORTH BRANCH OF ROCK CREEK





1. M:22-40
2. MD 115 over North Branch of Rock Creek
3. Montgomery Co., MD
4. Wallace, Montgomery & Assoc.
5. 12/97
6. MD SHPO
7. Looking West
8. 1 of 4



1. M: 22-40
2. MD 115 over North Branch of Rock Creek
3. Montgomery Co., MD
4. Wallace, Montgomery & Assoc.
5. 12/97
6. MD SHPO
7. Looking East
8. 2 of 4



1. M: 20 16
2. 15016, MD 115 OVER NORTH BRANCH OF ROCK CREEK
3. MONTGOMERY COUNTY
4. WALLACE, MONTGOMERY & ASSOC.
5. 12/97
6. MD SHPO
7. ELEVATION LOOKING UPSTREAM
8. 3 OF 4



1. M: 22-40
2. 1506, MD 115 OVER NORTH BRANCH OF ROCK CREEK
3. MONTGOMERY COUNTY
4. WALLACE, MONTGOMERY & ASSOC.
5. 12/97
6. MD SHPO
7. ELEVATION LOOKING DOWNSTREAM
8. 4 OF 4